

REMARKS

Claims 1-27 are pending in the present application. Claims 1-12, 14-21 and 23-25 were rejected and claims 13, 22, 26 and 27 were objected to in the Office Action dated September 16, 2004. Claims 1, 2, 4, 12 and 20 are amended. Reconsideration of all claims is requested in light of the amendments made and the arguments presented below.

Claim Rejections - 35 USC § 102

Claims 1-2, 4-9, 12, 14-16, 19 and 24 were rejected under 35 USC 102(e) as anticipated by Wenger (US Patent 6,751,493). Claim 1 as amended recites, "the plurality of sensor units and the plurality of sensor leads being retained by the template in a detachable manner such that the plurality of sensor units and the plurality of sensor leads are fully detachable from the template permitting separation of the template from the plurality of sensor units and the plurality of sensor leads." These limitations do not appear to be shown by Wenger. In particular, Figures 1 and 2 of Wenger do not appear to show sensor leads that are fully detachable from the template as in claim 1. Wenger discloses, "The sensors and leads are formed integral to the mask," column 9, line 20. Wenger shows certain sensors (V5 and V6) being repositionable, but leads 23 attached to these sensors appear to remain attached to the mask thus preventing separation of the mask and the sensor leads. Because these claim features do not appear to be shown by the cited reference, it is submitted that claim 1 as amended distinguishes over the cited reference.

Claims 2-11 depend from claim 1 and are submitted to be allowable at least for depending from an allowable base claim. In addition, claim 2 recites, "an individual sensor unit comprises a chip of material in which a sensor is retained and wherein the material is chosen to be the material of a substrate to which the sensor unit may be attached or a material having a higher thermal conductivity than the material of the substrate." Sheet 13 and outline 16 were cited in the Office Action as showing "a chip of material" of claim 2. However, it is not understood how sheet 13 corresponds to "a chip of material" of claim 2. Wenger states, "The device is a dermal chest mask 11 which is

formed of a sheet of flexible non-conducting material 13,” column 8, lines 24-25. Thus, 13 appears to refer to the sheet of mask 11. It is not clear how sheet 13 could be part of a sensor unit “being retained within a cutout,” as required by claim 1, if sheet 13 is the sheet in which the cutout is formed.

In addition, Wenger does not appear to disclose that the material of sheet 13 or outline 16 is the material of a substrate. In Wenger, it appears that a human body is used as a substrate but the material of sheet 13 is not disclosed as being made from the same material. Similarly, the adhesive of outline 16 is disclosed as “a biocompatible electrically conductive adhesive, such as hydrogel,” column 9, lines 23-24. It is not disclosed as being the material of a substrate such as a human being. In addition, there appears to be no indication of thermal conductivity of either the material of sheet 13 or adhesive of outline 16. Therefore, Wenger does not appear to show “the material is chosen to be the material of the substrate to which the sensor unit is attached or a material having higher thermal conductivity.” Because these claim elements are not shown, claim 2 is submitted to be additionally allowable over the cited reference.

Claim 4, as amended recites, “an alignment tool that aligns the template to the substrate.” The Office Action cited column 10, lines 33-37 as showing this feature. This portion of text discloses, “The sheet material of the mask contains designator markings or indicia to simplify attaching.” Claim 4 is amended to recite, “the alignment tool and the template being separately movable.” It appears that the indicia of Wenger are not “separately movable” from the template because they are contained by the template. Thus, it is submitted that claim 4 as amended distinguishes over the cited reference.

Claim 5 recites, “The first surface of the template is coated with an adhesive film to provide a continuous tacky surface.” The Office Action cited “adhesive film” 16 as showing this feature. However, Figure 1 shows outline 16 limited to an area around a sensor and Wenger discloses, “a biocompatible electrically conductive adhesive, such as hydrogel, is applied to the body contacting side of the sheet at each sensor for adhesion to the skin of the patient,” column 9, lines 23-26. “The size of the adhesive area is generally between 3 and 9 square centimeters,” column 9, lines 30-31. Thus, it appears that the adhesive of Wenger does not provide a continuous tacky surface, but instead provides

discontinuous patches of adhesive around sensors. Therefore, it is submitted that this limitation is not shown and that claim 5 is additionally allowable.

Claim 8 recites, “a release layer removal tool that rolls up the release layer to expose the tacky surface.” The Office Action cited tab 41 as showing this feature. However, tab 41 does not appear to roll up the release layer. Wenger discloses, “pull tabs 41 on the sensors V5 and V6 to facilitate detaching the sensor and lead from the mask,” column 14, lines 16-19. Thus, it appears that pull tabs 41 are for separating the sensor from the mask, not for rolling up the release layer. No further disclosure was found in Wenger indicating this use for tabs 41. Therefore, it is submitted that claim 8 is additionally allowable.

Claim 9 recites, “the sensor unit is retained within the cutout by an adhesive tape that extends over the sensor unit.” The Office Action identified “adhesive tape” 16 as showing this feature. However, with respect to feature 16, Wenger states, “A biocompatible electrically conductive adhesive, such as hydrogel, is applied to the body contacting side of the sheet at each sensor for adhesion to the skin of the patient. It is generally transparent and shown in outline 16.” Thus, it appears that “16” refers to an outline of an adhesive between the sensor and a patient. No tape appears to be disclosed. The adhesive appears to adhere the sensor to the patient, not retain the sensor within a cutout. Therefore, it is submitted that claim 9 is additionally allowable.

Claims 12, 14-16, 19 and 24 were rejected because the method “could be met by the regular operation of the system disclosed by Wenger.” It is submitted that this assertion does not form a prima facie case of anticipation as required by 35 USC 102. “To anticipate a claim, the reference must teach every element of the claim,” MPEP 2131. Even if the methods of these claims “could be” carried by the system of Wenger, this does not mean that every element is taught as required. Therefore, it is submitted that a prima facie case of anticipation has not been made with respect to these claims. It is requested that every element of these claims be identified in the cited reference, or that the rejections be withdrawn.

Claim 12 as amended recites, “detaching a sensor unit from the template; subsequently attaching the sensor unit to the substrate surface at the predetermined location established by the template; and subsequently removing the template from the

substrate, leaving the sensor unit attached to the substrate.” These limitations do not appear to be shown by Wenger. It appears that the template of figures 1 and 2 of Wenger remains in place when sensors are positioned. Certain sensors of Wenger (V1-V4) appear to be permanently attached to the template. Other sensors (V5, V6) appear to be movable but are still attached by their leads. “A portion of the mask surrounding the leads for both of the sensors is also precut for a predetermined length thereof whereby the leads are detachable in variable length and are flexible to permit repositioning of the V5 and V6 sensors,” column 13, lines 31-35. Wenger discloses reattaching such sensors to the mask when relocated. “The V5 and V6 sensors can be made slightly larger in size than the holes 39 provided in the mask for the alternate V5 and V6 positions so that the sensors overlap the edges of the holes when they are reattached to the mask,” column 13, lines 59-62. Thus, it appears that the template of figures 1 and 2 of Wenger is not removed after positioning of sensors. Even if the template shown by Wenger were removed, it is not clear that the sequence would be that of claim 12, i.e. detachment from the template followed by attachment to the substrate followed by removal of the template. Therefore, it is submitted that claim 12 is not anticipated by the cited reference.

Claims 13-19 are dependent on claim 12 and are submitted to be allowable at least for depending from an allowable base claim. Claim 14 recites, “peeling back an adhesive tape that is attached to the sensor unit and is also attached to a portion of the template.” Wenger does not appear to show this limitation. In particular, Wenger does not appear to show an adhesive tape or its use. Because this element is not shown, claim 14 is submitted to be additionally allowable.

Claim 16 recites, “the bonding material is thermally conductive.” This limitation does not appear to be shown by Wenger. Wenger does not appear to disclose the thermal characteristics of the materials used. No other reference is cited for the thermal properties of the materials used by Wenger. Therefore, claim 16 is submitted to be additionally allowable.

Claim 19 recites, “using a pressure sensitive adhesive.” This limitation does not appear to be shown by Wenger. Wenger discloses, “a biocompatible electrically conductive adhesive, such as hydrogel,” column 9, lines 23-24. However, Wenger does not appear to disclose that such an adhesive is pressure sensitive. Therefore, it is

requested that this claim element be identified in the reference or that the rejection be withdrawn.

Claim 24 recites, “placing a template that has alignment marks against a first surface of the substrate such that the alignment marks are visible through the substrate.” This limitation does not appear to be disclosed by Wenger. In particular, Wenger does not appear to disclose alignment marks that are visible through the substrate. Wenger is directed to applying sensors to human bodies. Therefore, it is not seen how alignment marks could be visible through such a substrate. In addition, claim 24 recites, “attaching the sensor unit to a second surface of the substrate.” It is not clear which features of Wenger correspond to the first and second surfaces of claim 24. It is requested that these claim features be identified in the cited reference, or that the rejection be withdrawn.

Claims 25-27 depend from claim 24 and are therefore submitted to be allowable at least for depending from an allowable base claim.

Claim Rejections - 35 USC § 103

Claims 3 and 17-18 were rejected under 35 USC 103(a) as unpatentable over Wenger in view of Klaus (US Patent No. 6,079,875). Claim 3 recites, “the chip has a planar surface with a spiral shaped groove; and wherein the sensor and a portion of the sensor lead is inserted in the spiral shaped groove and is cemented in position.” The Office Action cited elements 18 and 7 of Klaus as showing these limitations. However, tape 18 and optical fiber 7 of Klaus do not appear to show a chip having “the sensor lead inserted in the spiral shaped groove” of claim 3. Klaus discloses, “support tape 18 on which an optical fiber 7, shown as a dotted line, is arranged,” column 4, lines 47-48. Klaus also discloses, “an optical fiber 7 is placed on the support tape 18 in the form of a meander.” Support tape 18 does not appear to have a spiral groove and it appears that optical fiber is placed on support tape 18, not inserted into a groove in its surface. Because this element of claim 3 is not shown, this claim is submitted to be allowable.

In addition, the motivation to combine the references is not understood. The Office Action stated that it would have been obvious “to modify the sensor unit disclosed by Wenger with a sensor arrangement provided in a spiral shaped groove as taught by

Klass et al. in order to provide a sensor lead of a greater length in a reduced size sensor unit.” However, there is no indication why one of skill would want “a sensor lead of greater length in a reduced size sensor unit.” It appears that the apparatus of Klass senses temperature along the entire optical fiber 7, so for this apparatus it is advantageous to use a long fiber. “When the temperature is measured with a long fiber, the temperature of even rather small areas or objects... can be measured and monitored exactly and continuously. Moreover, such a long optical fiber advantageously forms an average value of the temperature automatically.” Klass, column 1, lines 58-64. However, this advantage appears to be specific to a structure where measurement is along an extended element and does not appear to apply where there is a separate sensor and lead as in claim 3. Thus, the cited motivation would not appear to suggest the desirability of the claimed invention. “The prior art must suggest the desirability of the claimed invention,” MPEP 2143.01 Because such a suggestion has not been provided, it is submitted that claim 3 is allowable.

Claims 17 and 18 were rejected on the basis that Wenger and Klass “disclose a system having a thermally conductive bonding material ie hydrogel.” However, Wenger does not appear to discuss the thermal properties of hydrogel, and Wenger does not appear to be concerned with temperature or its measurement. Thus, it is not clear what basis exists for the assertion that hydrogel is thermally conductive. It is requested that a reference be provided showing this element or a basis for this assertion be otherwise provided. Claims 17 and 18 recite specific ingredients for the bonding material that do not appear to be shown by the references. The Office Action asserted that the choice of these materials was “considered to be the use of a ‘preferred’ or ‘optimum’ material out of a plurality of well known materials.” However, neither reference appears to discuss the desirability of thermally conductive adhesive. The Office Action indicated that a thermally conductive adhesive would “not cause discomfort once placed in position.” However, it is not understood how thermal conductivity would reduce discomfort and there appears to be no such teaching in Wenger and Klass. Even if a thermally conductive adhesive was desired, there is no reference provided for the use of “diamond powder” of claim 17 or “silver powder” of claim 18. Therefore, it is submitted that a prima facie case of obviousness has not been made with respect to these claims.

Claims 10-11, 20-21 and 25 were rejected under 35 USC 103(a) as unpatentable over Wenger in view of Renken (US Patent No. 6,325,536). Renken was cited as showing a lead clamp. However, there appears to be no adequate motivation to combine these references. The Office Action stated that such a combination would be obvious "in order to help hold the plurality of leads in place and aid in the attachment of the leads to external processing devices." However, Wenger appears to already have a structure that holds the leads in this way. Conductive strips 23 end in "electrical contact or terminal areas 25, 27," column 10, lines 14-15. See also figures 1-2. "The six individual terminals 25 for V1 to V6 are contiguous, and the terminal ends of the strips are preferably disposed aligned with each other to facilitate connection to a common connector which can be utilized for all four classes of sizes. A standard clip is envisioned to simplify use of the mask of the present invention permitting a single clip connection," column 9, lines 13-19. Thus, because the conductive strips of figures 1 and 2 of Wenger are formed integral to the mask, they are held in place in a manner that allows attachment to external devices. Because Wenger already shows these features, there appears to be no motivation to add additional structures to provide such features. Therefore, it is submitted that there is no adequate motivation to combine the references as in the Office Action.

In addition, claim 20 is amended to define a sensor assembly and to include the limitation, "the sensor assembly and the template being physically separate." As discussed above, the embodiments of Wenger do not appear to show separate sensor assembly and template because the conductive strips 23 of Wenger are formed integral to the mask. These separate portions do not appear to be shown by Renken either. Because this limitation of claim 20 is not shown by the cited references, it is submitted that claim 20 is allowable. Claims 21-23 depend from claim 20 and are therefore submitted to be allowable at least as depending from an allowable base claim. Claim 23 does not appear to be listed as rejected under either section 102 or 103. An indication of the grounds for rejecting claim 23, if any, or an indication of its allowability, is requested.

Accordingly, all claims are now believed to be in condition for allowance and an indication of their allowance is respectfully requested. If the Examiner is aware of any additional matters that should be discussed, a phone call to the undersigned attorney at phone number (415) 318-1160 would be appreciated.

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Respectfully submitted,



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Date